

Ocean Prediction Center 2006 Accomplishments

1. Introduction

The past year saw a record number of personnel changes in the Ocean Prediction Center (OPC). Four of OPC's long time employees retired: Joe Cope, Marine Forecaster in the late spring, Lee Chesneau, Marine Forecaster and outreach focal point, in the summer, Jeanette Rolan, Secretary, also in the summer, and Ed Schoenberg, Senior Marine Forecaster, at year's end. As a result of these retirements OPC was able to bring on board Victor DeJesus and Robert Banks as marine forecasters and Terri Borza to fill our secretarial position.

On November 26, Dr. Ming Ji assumed the helm of the Ocean Prediction Center. This was an important milestone because for the first time the OPC is being led by a full-time director. The position was expanded in response to recommendations to the President by the U.S. Commission on Ocean Policy. In his former position Dr. Ji was a senior scientist in National Oceanic Atmospheric Administration (NOAA's) seasonal-to-interannual climate prediction program and was the director of NOAA's Climate Dynamics Program. He succeeds Dr. Jim Hoke, who was OPC's first director, serving since 1995. Dr. Ji envisions OPC as the Center where NOAA's Ocean observations, research and operational services come together. To make this vision a reality, OPC will strive to stay ahead of the science and technology curve and to develop new oceanographic analysis and forecast products that are driven by user demands.

2. Major Accomplishment

Wave Height Grids Available

On October 10, an important milestone was achieved with the implementation of routine production of significant wave height grids from the on 0-, 24-, and 48-hour wave height graphical charts. These grids are the first marine fields produced by national centers provided to coastal Weather Forecast Office (WFO's). The outline for achieving this was put together in the fall of 2001 but final work on it began in earnest in late 2005 with close coordination of OPC, Tropical Prediction Center (TPC) and National Weather Service Headquarters (NWSHQ). These fields will now form the basis for collaboration of OPC with the WFOs that have marine responsibilities. In addition, in October, they were made available on the Internet to users via PDA's and cell phones.

3. Emergency Response

Emergency response support was provided to the U.S. Coast Guard (USCG) and The NOAA HAZMAT for two major incidents involving vessels in distress. In one case, support was provided for an extended period of 10 days.

Tug Boat Sinks Off Cape Fear, North Carolina

The OPC provided weather and sea forecasts to NOAA HAZMAT office in support of hazard mitigation and Coast Guard operations associated with a vessel incident. The tugboat *VALOUR* sank off Cape Fear, North Carolina around 2:30 AM, January 18. The vessel was transporting a 500-foot barge containing diesel fuel. Six crew members were rescued alive, two others died and one remains missing. The Coast Guard placed a three-man crew on the barge that was able to prepare it for capture by a seagoing tug. This tugboat and its crew were also responsible for the rescue of those crewmembers forced to abandon the sinking tug.

Support Provided to USCG and NOAA HAZMAT

On July 24, OPC received information from the USCG, through WFO Anchorage, that a car carrier *Cougar Ace* was in distress in the OPC waters about 245 nm south of Atka, AK. The OPC contacted the USCG to offer tailored weather forecasting support the rescue and recovery effort. The offer was accepted and through August 3, OPC provided spot 48-hr forecasts with a trend to day 5 for the USCG and NOAA HAZMAT. These forecasts were specific to the incident area. The vessel was eventually towed to the Alaska region waters at which time WFO Anchorage picked up forecast responsibility.

4. Conference Participation

This was a year in which OPC was represented at a number of noteworthy conferences. Our participation in these important events is a direct result of the important advances OPC made in transferring the QuikSCAT technology to OPC forecast operations.

Joe Sienkiewicz, OPC Science and Operations Officer (SOO), presented a poster titled, "Near surface winds in the vicinity of SST gradients as observed by QuikSCAT" as part of a joint poster session of the 14th Conference on Interaction of the Sea and Atmosphere and 14th Conference on Satellite Meteorology and Oceanography, during the AMS meeting held in Atlanta, GA, January 29-February 2. Greg McFadden, of SAIC was a co-author with Joe Sienkiewicz on the poster. The poster gave observational evidence of significant wind speed gradients across moderate to strong sea surface temperature (SST) gradients, highlighted tools available to OPC forecasters to improve wind forecasts, and described a method for bias correcting the National Centers for Environmental Prediction (NCEP) North American Model (NAM) and Global Forecast System (GFS) winds used within the OPC. Joe Sienkiewicz was also co-author with Joan Von Ahn of STG/NESDIS ORA and Jerome Patoux of the University of Washington on a second poster titled, "An evaluation of the application of sea level pressure analyses derived from near real-time QuikSCAT winds as an operational tool within the National Oceanic Atmospheric Administration (NOAA) Ocean Prediction Center."

In a special session concerned with the operational application of ocean satellite observations at the 2006 American Geophysical Union (AGU) Ocean Sciences Conference in Honolulu, HI on February 20, Joe Sienkiewicz presented a paper titled, "Hurricane Force Extratropical

Cyclones as Detected by QuikSCAT". He discussed the use of QuikSCAT ocean vector winds to detect hurricane force storms in OPC operations and then presented results from the 5-year climatology that the OPC Ocean Applications Branch (OAB) has constructed. Joe Sienkiewicz also was co-author on a poster titled, "Operational use of Sea Level Pressure Analyses Derived from QuikSCAT Winds at the National Oceanic Atmospheric Administration (NOAA) Ocean Prediction Center".

Joe Sienkiewicz attended the 13th Cyclone Workshop October 22-27 at the Asilomar Conference Center in Pacific Grove, CA. He presented a talk entitled, "Hurricane Force Extratropical Cyclones as Detected by QuikSCAT". Co-authors for this paper are contract partners Joan Von Ahn and Greg McFadden (SAIC/OPC).

Joe Sienkiewicz and Bob Daniels (IMSG/ OPC Oceanographer) attended the 10th HYbrid Coordinate Ocean Model (HYCOM) Consortium Meeting at the Center for Ocean - Atmospheric Prediction Studies (COAPS) at the FSU November 7-9. Bob Daniels gave a short talk describing the OPC evaluation of the NCEP HYCOM based Real Time Ocean Forecast System-Atlantic (RTOFS_ATL).

Joe Sienkiewicz, Bob Daniels, Joan Von Ahn and Greg McFadden represented the OPC at the Marine Technology Society/IEEE OCEANS 2006 Conference in Boston, MA September 19-21. Joe Sienkiewicz gave a talk "The NOAA OPC." In this talk OPC was shown to be a Center for ocean weather forecast excellence, a test bed for evaluating observational and numerical model advances and transferring them to the operational forecast environment, a vehicle for outreach with the marine customer, and a Center for the development of operational oceanographic products.

Joan Von Ahn gave two talks at the meeting. The first was entitled, "Ocean Surface Winds from Space - A Collaborative Education Effort." This talk described the evaluation of QuikSCAT within the OPC and Tropical Prediction Center (TPC) and the need for forecaster specific training material.

Von Ahn's second talk described an extended use of QuikSCAT winds. She has worked with the Planetary Boundary Layer (PBL) Group at the University of Washington in Seattle to adapt the UWPBL Model to retrieve sea level pressure from QuikSCAT ocean surface winds. She gave several examples of the retrievals and highlighted the differences between the models and the QuikSCAT based central pressures. Co-authors included Joe Sienkiewicz of the OPC, Greg McFadden of SAIC/OPC and Jerome Patoux of the University of Washington PBL Group.

Dave Feit, Chief of the Ocean Forecast Branch, and Scott Prosis, OPC Senior Marine Forecaster, attended the NOAA Hurricane Conference at the Tropical Prediction Center (TPC), Miami, FL December 4-7. Scott made two presentations. The first summarized OPC's

activities during the 2006 hurricane season and the second was related to procedures for indicating wind gusts after hurricanes transition to extra tropical systems.

5. Training at Government Facilities

U.S. Naval Academy

OPC forecasters Lee Chesneau, Jim Clark, and George Bancroft and SOO Joe Sienkiewicz participated in the annual Safety At Sea Seminar hosted by the US Naval Academy Sailing Squadron, West Marine, and the Marine Trades Association of Maryland the weekend of April 1-2. The event was held in Alumni Hall of the Naval Academy and on the waters of the Severn River. Approximately 350 civilian boaters and 400 midshipmen attended the Saturday sessions and 150 civilian boaters the Sunday sessions. Joe and Lee gave several presentations and along with Jim and George staffed a booth. This was the twelfth year the OPC has been invited to take part.

Dave Feit, and Joe Sienkiewicz attended the NWS Marine Workshop held in Monterey, CA, May 1-4. Dave made a presentation covering the role of OPC within the NWS and National Centers for Environmental Prediction (NCEP), its relationship to the forecast offices, and its technical capabilities. Joe's talk concerned the operational use of wave models including practical information regarding the interpretation of Wave Watch 3 output.

6. Outreach

Outreach is a vital component of OPC's mission to enhance the safety of mariners. Making the public aware of the services we provide and informing them where they can be obtained and how to use them effectively is an important part of the foundation mariners must have to ensure their safety.

Boat Shows

On February 19-20, Lee Chesneau represented the OPC at the Miami Strictly Sail Boat Show. He gave a seminar presentation to 100 mariners in attendance where OPC warning products and services were discussed.

Frances Achorn and Kevin Achorn, OPC Marine Forecasters, participated in the Atlantic City Power Boat Show, February 1-3. Fran Achorn worked the NOAA booth with representatives from Weather Forecast Offices Mt. Holly, NJ, and Upton, NY.

Every four years the Volvo Ocean Race makes a stop at Baltimore's Inner Harbor and is the centerpiece for Baltimore's Waterfront Festival. As it has done for more than a decade, the OPC was an active participant with other members of Team NOAA in staffing a booth at the festival from April 28 through May 1. According to NOAA Public Affairs, a record number of visitors attended the festival. Among the visitors to the NOAA booth were NOAA Administrator VAdm Lautenbacher and RAdm DeBow, Director of NOAA's Office of Marine

and Aviation Operations, and Mr. John Dunnigan, Assistant Administrator for NOAA's Ocean Service.

On September 6, Dave Feit, Jim Hoke, and Paul Vukits, Senior Marine Forecaster and outreach focal point, participated in the U.S. kick-off for the Velux 5 ocean race in Norfolk, VA. This race, which started in October from Bilbao, Spain, is a single handed round the world event which has an April stopover in Norfolk. Dave, Jim, and Paul staffed a booth which had a display showing the weather products and services OPC prepares.

Dave Kosier, Marine Forecaster and assistant outreach focal point, represented OPC at the Coast Day Festival held in Lewes, Delaware on October 1. Dave staffed a booth with the OPC display and was available to talk to the public about the Center.

Seminars and Workshops for Sailing and Boating Organizations

Lee Chesneau conducted a series of seminars at the Seattle Boat Show, January 10 – 13, 2006. Approximately 500 mariners representing a broad spectrum from professional mariners, commercial fishermen, and the larger recreational cruising and racing mariner attended the seminars. Lee also spent time speaking with mariners at the Seven Seas Cruising Association booth, sponsors of a 2 day marine weather workshop held at the Pacific Maritime Institute in Seattle, January 14 and 15.

Lee Chesneau represented the OPC in Stuart, Florida at the Passage Maker sponsored Trawlerfest University and Trawlerfest Events January 24 – 27. He discussed OPC warning products and services in detail to some 500 recreational, coastal, and offshore mariners.

In February 2006, Lee Chesneau made several presentations to mariners. On February 18, he gave a presentation to 300 mariners at the Mamaroneck Yacht Club in New York and discussed how to access the products while at sea. During the same period, he conducted a two-day marine weather workshop to a maximum capacity class of 24 motivated cruising and racing recreational mariners. The course was conducted under the sponsorship of the Seven Seas Cruising Association (SSCA) at the Miami Yacht Club. On February 26, he gave a presentation to 35 offshore cruising and racing mariners at the Doyle Sails facility in Annapolis, Md.

On Saturday March 11, in Annapolis, MD, Paul Vukits, participated in the annual Singles on Sailboats, Inc. "Spring Training", which is a day long training program designed for sailors of novice, intermediate, and advanced skill levels. A total of approximately 300 nationwide attendees attended four 90-minute sessions. Paul's session was titled "Weather by the National Oceanic and Atmospheric Administration (NOAA)."

Lee Chesneau represented the OPC at Fish Expo, Providence RI April 7, 2006 where he presented a 90 minute seminar program to mariners and commercial fishermen.

In addition, he conducted a 2 day marine weather workshop at the Oakland Yacht Club, Oakland, CA, April 18-19. The event was sponsored by the Seven Seas Cruising Association.

Joe Sienkiewicz gave a weather safety briefing in Annapolis, MD to participants in the 2006 Annapolis to Bermuda Ocean Race. He discussed NWS text and graphical marine analysis and forecast products and gave instructions on how to access products when underway.

Joe Sienkiewicz was invited to speak at the Captain's Meeting for the 100th anniversary Newport Bermuda sailing race. He gave an overview of available National Weather Service (NWS) marine products.

Professional Mariner Organizations

Lee Chesneau represented the OPC at the Maritime Institute of technology and Graduate Studies (MITAGS) Advanced Meteorology Course February 13 –17 at their campus in Linthicum Heights, MD. A field trip to the OPC operations area in Camp Springs, MD gave the students an opportunity to see first hand how OPC forecasters assemble the products broadcast to mariners at sea and the importance of their ship observations to the forecast process.

On September 13, Paul Vukits presented a seminar detailing the OPC services and products to the heavy weather avoidance class at the MITAGS in Linthicum, MD. At the conclusion of the seminar, Paul escorted the class to OPC where an on-site tour of the Center was given.

On November 1, Paul Vukits made a presentation to a class of Masters and Mates at MITAGS. The presentation detailed the OPC products and services. Afterwards the class was escorted to the NOAA Science Center where they were given a tour of the OPC and interacted with the duty forecasters.

Academic Organizations

On April 7 Lee Chesneau gave an overview of the OPC forecast process to students of the Sea Education Association (SEA) semester at sea program, Woods Hole, MA. The importance of ship observations to the analysis and forecast process was emphasized to the 20 students in attendance. The students will be leaving for a semester at sea on the Robert C. Seaman, home ported on the west coast, and the east coast ship, Corwith Cramer. These SEA ships routinely send in their observations as Voluntary Observing Ship (VOS) observers. Recently, the Cramer identified a previously unknown communications problem with the USCG voice broadcast to NWSHQ.

Lee Chesneau also participated in a Safety at Sea Seminar at Kings Point Merchant Marine Academy, April 8 - 9. He spoke to the mariners, many who will be participating in major long distance sail boat races such as the Newport to Bermuda race this summer.

Forecast Offices and Other Government Facilities

Joe Sienkiewicz visited Weather Forecast Office (WFO) Honolulu, HI (HFO) on February 21. He was given a tour of HFO operations by Meteorologist in Charge Jim Weyman. To highlight the OPC work with QuikSCAT, he gave a short presentation of the hurricane force extratropical cyclone study that was presented at the AGU Meeting the previous day. Topics discussed included the unified surface analysis, collaboration methods, infusion of technology, and gridded forecast products.

Joe Sienkiewicz also visited the NWS Pacific Region Headquarters in downtown Honolulu on February 22. Joel Cline, Meteorological Services Division Chief, hosted Sienkiewicz and gave him an overview of Pacific Region responsibility and functions.

On February 22, several NOAA employees met with the technical staff of the Joint Typhoon Warning Center (JTWC) at Pearl Harbor, HI. Mark DeMaria, National Environmental Satellite, Data, and Information Service (NESDIS) Office of Research and Applications, Stan Wilson, NESDIS Chief Scientist, Joel Cline and Joe Sienkiewicz, discussed several science issues including the operational use of ocean vector winds with two of the Typhoon Duty Officers and Mr. Ed Fukata (ship router and training officer). The JTWC will be represented at an upcoming workshop on future requirements for ocean vector winds to be held at the TPC in June.

On September 7, Jim Hoke, Dave Feit, and Paul Vukits met with Capt. Emily Christman, Commanding Officer, NOAA Atlantic Marine Operations. Capt. Christman provided a briefing and tour of the Center. Capt. Christman noted that there would be a conference in January 2007 for NOAA fleet officers. She agreed that it would be useful for OPC to send a representative to this conference to provide a briefing detailing OPC products and that, in general, more direct lines of communications with the NOAA fleet should be established.

Schools and Other Public Facilities

Curt Janota, OPC Development Meteorologist, spent two days, November 2 and 3, teaching 8th grade students at Montgomery County Public School System's Shady Grove Middle School in Derwood, MD about weather instruments and their use in observing and forecasting weather. Emphasis was given to how these tools are able to better forecast severe weather and in turn how those better forecasts mean that watches and warnings should, indeed, be heeded.

Joe Sienkiewicz participated in the annual Career Day at the Plum Point Elementary School in Huntingtown, MD on November 21. Career Day is held to introduce elementary school students to a variety of jobs and careers. Joe gave presentations to four groups of approximately 15, 3rd, 4th and 5th grade students. He talked about what it is like to be a NOAA marine meteorologist, described the skills needed to be a meteorologist, and how his interest in meteorology began. The students were engaging and asked excellent questions and responded quickly when asked questions.

Dave Feit, Chief of the Ocean Forecast Branch, presented a seminar at the Havre de Grace, MD, Maritime museum On December 11. The title of the seminar was “Operations and Services of the OPC”. The talk examined the unique role of marine forecasting and explained its effect on the safety of and the economic importance to mariners both nationally and globally.

7. Special *on-Demand* Support Activities

On March 20, the OPC received a call from the US Coast Guard, Program Coordinator, Rescue & SARSAT Operations asking for assistance in determining the weather situation in the Red Sea where the Al Salaam ferry sank in Egyptian waters on February 2, 2006. The Coast Guard was responding to the International Maritime Organization, which asked the U.S. Government to conduct an investigation and produce a report on the chain of events leading up to the sinking. The Coast Guard noted that they had tried to obtain the information from several federal agencies but with no success. Although OPC does not analyze or forecast for that area, Dave Feit was able to pull together a combination of ship observations, QuikScat wind retrievals, and appropriate model data to provide the necessary information. The Coast Guard expressed appreciation for OPC’s efforts.

On September 19, OPC received a request from the DHS to provide weather support to the United States Coast Guard (USCG). The support included six hourly marine forecasts for winds, waves, and weather through 21 September for a location about 90 nm east of Boston. The forecasts provided were in support of a special exercise. At its conclusion the USCG relayed the following to the OPC, "Your updated weather reports throughout the week helped the Coast Guard determine the safest responses to the exercise threat of a suspicious vessel bound for the East Coast...Thanks for your outstanding support to our NOC CG desk and the Coast Guard Command Center".

Dave Feit and Joe Sienkiewicz met with Captain Kenneth Barton, NOAA Corps, of the NOAA NOS ORR on Friday, October 20. Capt. Barton is the Chief (Acting) of ORR. The purpose of the meeting was to discuss the missions of both NOAA offices and to explore any common interests. OPC does provide support to ORR via NOAA HAZMAT for incidence response on an ad hoc basis.

8. OPC-TPC Synergy

In 2003 a vision for enhancing the synergy between OPC and the Tropical Prediction Center (TPC) was developed through the efforts of NCEP management and staff and the National Weather Service Employees Organization (NWSEO). Among the many objectives of this endeavor is an enhanced operational backup capability, synchronizing OPC and TPC products, better use of operational resources, and enhanced training opportunities for the staffs of both centers. The effort to increase synergy between the two centers has been recognized as a successful venture throughout NCEP. In fact, Dave Feit and Jim Hoke were asked to present

the lessons learned from the OPC-NWSEO partnership to other NCEP centers. There were a number of significant activities in 2006 related to this important project.

Curt Janota traveled to TPC, April 3-7, to increase further the synergy capability between the OPC and TPC's Tropical Analysis and Forecast Branch (TAFB). During the trip, he was able to modify OPC's computer programs to allow TAFB to, for the first time, create and disseminate virtually all OPC generated graphical products. Previously, the OPC had no viable external graphical product backup. This is in addition to the existing ability to backup OPC's operational text products. Also, this new capability will allow TAFB forecasters to remain proficient in OPC production techniques without the need of physically being in the OPC.

Dave Feit and Scott Prosise, Senior Marine Forecaster and National Weather Service Employee Organization (NWSEO) representative, along with TPC representatives, participated in a meeting of the OPC-TPC Synergy Team September 12-13 at TPC, Miami, FL. The purpose of the meeting was to review the progress made by the Synergy Team during the past fiscal year and to recommend actions to be taken in FY07.

Both Dave and Scott also participated in the TPC/OPC synergy meeting December 6-7. An important agreement that came out of the meeting related to ensuring that TPC's and OPC's graphical products are issued, for all practical purposes, simultaneously.

Max Mayfield, Director of TPC, and Ed Rappaport, Deputy Director of TPC, invited Ming Ji to visit TPC before Max's retirement on January 3. Ming traveled to TPC on December 19. Bill Proenza, the incoming TPC Director, also arrived for his first visit to TPC on that day. Ji, Mayfield, Proenza and Rappaport met and discussed OPC-TPC synergy team issues and the scope of NOAA's Marine Weather (MWX) Program. As the result, OPC and TPC Directors approved the FY07 synergy vision document, and agreed to defer the final approval of the synergy team charter until the new TPC director has a chance to review it. The discussion also resulted in a better understanding on potential impacts on both the budget process and executions from an expanded MWX program that may include part of TAFB.

9. Media

Joe Sienkiewicz answered several questions concerning the impact of the Gulf Stream on weather. Joe's response appeared in the - Ask the Experts portion of the USA Today weather page on January 6.

10. Special Visitors

On June 5, Senator Barbara Mikulski toured the OPC and HPC operations area. The tour was hosted by National Centers for Environmental Prediction (NCEP) Director, Dr. Louis Uccellini. Senator Mikulski met many staff members and expressed a great deal of interest in both the operational functions of OPC and HPC in general as well as the various specific

responsibilities of the forecasters. She also took the time to inquire about how each of the staff members she met became interested in meteorology and about the path that lead them to their current job. Senator Mikulski concluded the tour with a press conference attended by both print and broadcast media.

On September 22, a delegation of eight officials from the Shanghai Meteorological Bureau (SMB) led by Vice Director-General XU visited the Ocean Prediction Center (OPC). The purpose of the delegation's visit was to research the U.S. Marine and Coastal Weather Services in preparation for the establishment of a Marine and Coastal Meteorological Center in Shanghai. Dave Feit hosted the group and briefed them on the organization, functions, and operational procedures of OPC.

Other special visitors during the year included SSCA Executive Board members Richard and Beth Blackford and Nancy and Berger Zapft on October 13 and Steve Bowden of SeaTech Systems and Jonathon Sebly of Xerso Marine Weather Systems. Mr. Selby made a presentation to OPC where he described how he integrates and provides OPC products as service to his customer base.

11. Publications

Joan Von Ahn, Joe Sienkiewicz, and Paul Chang (NESDIS) have published a paper entitled: "The Operational Impact of QuikSCAT Winds at the National Oceanic Atmospheric Administration (NOAA) OPC". The paper was published in the August 2006 issue of *Weather and Forecasting*, a journal published by American Meteorological Society (AMS). The paper articulates the positive impact of QuikSCAT data on the wind warning process at the OPC. These include the near real-time availability of QuikSCAT data in the operational workstations and the capability of QuikSCAT to "see" winds of hurricane strength in ocean storms. It also describes the impact of sea surface temperature fronts on the near surface wind field.

Joe Sienkiewicz collaborated with Professors Dudley Chelton and Michael Freilich of Oregon State University and Joan Von Ahn on a paper entitled: "On the Use of QuikSCAT Scatterometer Measurements of Surface Winds for Marine Weather Prediction". The paper was published in the August 2006 issue of AMS journal *Monthly Weather Review*. This paper, through two case studies, discusses the application of QuikSCAT winds on operational weather prediction and complements the earlier work by Chelton and Freilich that illustrated the impact on numerical weather prediction.

12. Awards

On July 7 Dave Feit and Curt Janota received Local Level NWS Isaac Cline Awards for leading a three year effort to increase the synergy at the Tropical Prediction Center and the Ocean Prediction Center.

On September 26, Lee Chesneau received the Regional Level Cline Award for his work as outreach focal point since 1995 when the OPC was formed. During the past year Lee has continued his extraordinary efforts and personal commitment to increasing external awareness about NCEP and the OPC product suite and services.

This award is named after Isaac Cline who played a key role in warning the residents of Galveston, Texas about an impending hurricane in 1900. His actions were instrumental in saving thousands of lives.

13. Bibliography

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On the Use of Scatterometer Measurements of Surface Winds for Marine Weather Prediction. *Mon. Wea. Rev.* **134** 2006. Chelton D.B., M.H. Freilich, J.M.Sienkiewicz and J.M. Von Ahn.

The Operational Impact of QuikSCAT Winds at the NOAA Ocean Prediction Center. *Wea. Forecasting*, **21**, 2006. Von Ahn, J. U., J. M. Sienkiewicz and P.S. Chang.

14. OPC Staff as of December 31, 2006

Administration

Ming Ji, Director
Kevin McCarthy, Deputy Director
Crystal Rickett, Administrative Officer
Teri Borza, Secretary

Ocean Forecast Branch

David Feit, Branch Chief
Senior Marine Forecasters: Robert Oszajca, Scott Prosise, Douglas Scovil, Paul Vukits

Marine Forecasters: Kevin Achorn, George Bancroft, Robert Banks, James Clark, Joseph Czarniecki, Victor DeJesus, James Kells, David Kosier, Hugh McRandal, David Mills, James Nolt, Michael Rowland, Todd Shaw, Ross Van Til

Ocean Applications Branch

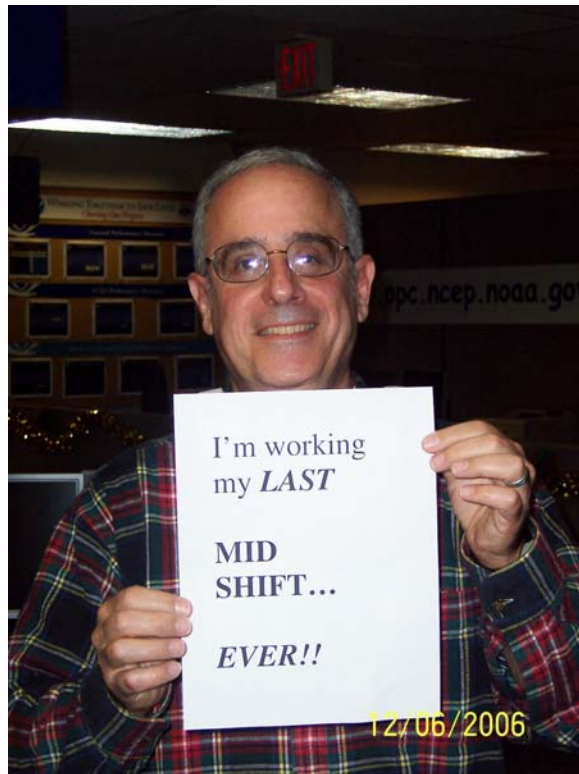
Joseph Sienkiewicz, Acting Branch Chief/Science and Operations Officer
Curt Janota, Development Meteorologist

Retirements

Joe Cope, Marine Forecaster
Lee Chesneau, Marine Forecaster
Ed Schoenberg, Senior Marine Forecaster
Jeanette Rolen, Secretary

Personnel Changes

Jim Hoke to Hydrometeorological Prediction Center
Ming Ji to Ocean Prediction Center



Senior Marine Forecaster Ed Schoenberg celebrating his last midnight shift before retiring after over 38 years of service.



Senior Marine Forecaster, left, Scott Prosis welcoming Senator Barbara Mikulski, right, to the OPC operations area during her June 5 visit.